

REMARKS

Claims 1-5, 10-14, 21, 23-26, 28, 29, and 49-65 are being examined in this application. These claims stand rejected under 35 U.S.C. § 112, first paragraph, a rejection that is addressed below.

Support for Amendments

Independent claims 1, 10, 21, 26, and 61 have been amended to focus the claims on transgenic bovines, bovine cells, and methods for using those bovines to produce xenogenous immunoglobulins. Support for the amendment to these claims is found, for example, in claims 5, 14, 25, and 29, which are now canceled, and in the specification, for example, at page 3, line 27-28 and 30-31; page 10, lines 1-3; page 11, lines 14-15; and page 37, lines 28-29. In addition, new claims 66-76 have been added. These claims find support in the specification, for example, as follows: claims 65-69, 73, and 74 at page 5, lines 8-10; claims 70-72 and 75 in original claim 4; and new claim 76 at page 9, lines 9-11.

Applicants note, for the record, that they do not agree with the enablement rejection raised by the Office, but have decided to pursue the previously pending claims in a continuation application. The subject matter removed from the claims is therefore canceled without prejudice.

Rejections under 35 U.S.C. § 112, first paragraph

Claims 1-5, 10-14, 21, 23-26, 28, 29, and 49-65 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. As applied to the present claims, this rejection is respectfully traversed.

The first basis for the rejection is the assertion that, while transgenic bovines are enabled, the specification does not reasonably enable claims directed to all ungulates. While Applicants disagree with the Office, this rejection is overcome by amendment of the claims to specify bovines. The Office agrees that claims to bovines and bovine cells are enabled, and this basis for the rejection may be withdrawn.

In addition, regarding claim 10, the Office states that only bovine B-cells are enabled as these are the cells that produce antibody. Applicants disagree with this rejection. While B-cells are indeed the antibody-producing cells, other somatic cells, such as fibroblasts, that carry immunoglobulin loci are enabled by Applicants' specification and are useful for production of immunoglobulin-producing transgenic bovines. Nonetheless, Applicants have limited current claim 10 to bovine B-cells and plan to pursue claims to other bovine (and ungulate) immunoglobulin-carrying cells in a continuation application. This basis for the rejection of claim 10 is now moot.

The Office also appears to require that the claims be limited to the production of "antibodies" and expression by bovines of both immunoglobulin heavy and light chain loci. This basis for the rejection is respectfully traversed. Currently, independent claims 21 and 26, which are directed to methods for producing antibodies in transgenic bovines

require that the bovines carry both heavy and light chain loci, as is appropriate for methods that result in antibody production. Independent claims 1, 10, and 61, on the other hand, require only one or more immunoglobulin loci -- that is, the animals may carry one or more heavy chain loci, one or more light chain loci, or both. These bovines can therefore either produce antibodies (i.e., when both heavy and light chain loci are present) or a single immunoglobulin (i.e., when only a heavy chain or only a light chain locus is present). The Office agrees that the specification enables the production and use of bovines carrying and expressing both heavy and light chains, resulting in antibody production. Applicants submit that production and use of bovines carrying a single immunoglobulin chain is similarly enabled by the present specification. Such animals may be generated by the same methods used to generate animals expressing both immunoglobulin chains, and these animals expressing a single immunoglobulin chain are also commercially useful. For example, a first bovine carrying heavy chain loci may be mated with a second bovine carrying light chain loci to produce animals that generate xenogenous antibody. This basis for the rejection may be withdrawn.

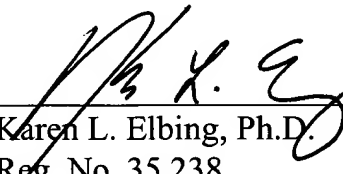
CONCLUSION

Applicants submit that the claims are in condition for allowance, and such action is respectfully requested.

If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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